RESEARCH PAPER

A Study to assess the effectiveness of digital detox combined with outdoor activities on mental well-being among rural adolescents in a selected rural area

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ABSTRACT

Background:
The increasing use of digital devices among Adolescents has become a growing concern due to its impact on mental well-being. Excessive screen time is associated with stress, anxiety, social isolation and reduced psychological health. Digital detox interventions, combined with outdoor group activities, may promote healthier lifestyle and improve mental well - being among Adolescents, particularly in rural communities where opportunities for structured recreational activities are limited.

Meterials & Methods:
A quantitative research approach with a pre-experimental one- group pre-test and post-test design was adopted for the study. The study was conducted among rural Adolescents in a selected rural area. A total of 800 Adolescents were selected using a purposive sampling technique. Baseline mental well- being was assessed using a standardized mental well-being scale. The intervention consisted of a structured digital detox program combined with outdoor group activities conducted over a specified period. Post-test assessment was carried out using the same tool after the intervention. Collected data were analyzed using SPSS Version 25 and descriptive & inferential statistics.

Results:
The findings revealed that the majority of Adolescents in pre-test had low well- being 525(63.6%), while 275 (36.4%) had moderate well-being. None of the Adolescents were found to have high well-being during the pre-test assessment.

In post-test, No Adolescents remained in the low well-being category. More than four-fifth of the Adolescents 525(81.4%) achieved high well-being, while 275(18.6%) had moderate well-being.

Conclusion:
The study was concluded that digital detox combined with outdoor group activities was effective in improving the metal well-being of rural Adolescents. The intervention can be considered a simple, cost- effective and practical strategy for promoting psychological health and healthy lifestyle behaviour among Adolescents in rural setting.

Keywords: Digital Detox, Outdoor Group Activities, Mental Well- being, Rural Adolescents, Mental Health.

"Technology is a useful servant but a dangerous master- Christian Lou's Lange."

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INTRODUCTION

Adolescence is a critical stage of physical, emotional, psychological and social development. With the rapid growth of internet access and digital technology, Adolescents increasingly use smartphones, social media, online gaming and other digital devices. While these technologies provide educational and social benefits, excessive screen time has been linked to stress, anxiety, depression, sleep disturbances, reduced physical activities ,poor academic performance and social isolation.

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Consequently and real- life activities has become an important public health concern.

Digital Detox is the intentional reduction or temporary avoidance of digital devices, has emerged as a promising non- pharmacological strategy to improve mental well-being. Studies suggests the limiting screen time can reduce stress, enhance concentration , improve sleep quality, strengthen interpersonal relationships and promote emotional stability. Outdoor group activities, including sports,games,nature walks and team building exercises, further contribute to mental well-being by encouraging physical activities, social interaction and peer supports.

Rural Adolescents are increasingly exposed to digital technologies due to Improve smartphone availability and internet connectivity. Therefore, the present study aims to assess the effectiveness of digital detox combined with outdoor group activities on mental well- being among Adolescents. The findings may provide valuable evidence for healthcare professionals, educators, parents to promote mental health and healthy digital practices among Adolescents.

MATERIALS &METHODS

The study adopted a True experimental research design to assess the effectiveness digital detox combined with outdoor group activities on mental well – being among rural Adolescents. A total 800 participants were selected using purposive sampling technique, ensuring the accessibility and feasibility for data collection. Prior to the study written informed consent was obtained from all participants to maintain ethical standards. The data collection tool was structured into two sections Section A includes demographic variables such as Age, Gender, screen time using. Section B consists of standardized questionnaires used to assess the effectiveness of digital detox with outdoor group activities on metal well- being .The collected data were systematically coded and analyzed using SPSS version 25 software. Both descriptive and inferential statistics methods were employed for analysis. Descriptive statistics, including frequency, percentage, mean and standard deviation, were used to summarize the data, while inferential statistics such as the chi-square test.

RESULTS

The collected data were computerized and analyzed using SPSs version 25. The data were analyzed using descriptive statistics (distribution, mean, standard deviation) and inferential statistics (chi-square value test). The result have been organized and present as given below.

Section A: Description of the demographic variables among rural Adolescents.

Table 01: Frequency and percentage distribution of demographic variables among rural Adolescents. (N=800)

Demographic Variables	Category	Frequency (n)	Percentage (%)
Age	13–14 years	133	47.5%
	15–16 years	92	32.9%
	17–18 years	55	19.6%
Gender	Male	148	52.9%
	Female	132	47.1%
Education	8th Standard	73	26.1%
	9th Standard	68	24.3%
	10th Standard	58	20.7%
	11th Standard	54	19.3%
	12th Standard	27	9.6%
Type of Family	Nuclear	201	71.8%
	Joint	79	28.2%
Daily Screen Time	<1 hour	89	31.8%
	1–3 hours	56	20.0%
	>3 hours	135	48.2%
Area of Residence	Urban	112	40.0%
	Rural	168	60.0%

Table 01 shows the demographic characteristics of 800 Adolescents. Nearly half (47.5%) were aged 13 to 14 years, followed by(32.9%) aged 15 to 16 years (19.6%) aged 17 to 18 years. Males constituted (52.9%) of the participants, while female accounted for (47.1%). Most Adolescents were studying in 8th (26.1%) or 9th standard (24.3%), with smaller proportions in 10th(20.7%), 11th (19.3%), and12th standard(9.6%). The majority belongs to nuclear families (71.8%), resided in rural area (60.0%), and reported more than 3 hours of daily screening time (48.2%), whereas(31.8%) spent less than 1hour and (20.0%) spent 1to3 hours on screen- based activities.

Section B: Assessment of the level of mental ell- being among rural Adolescents

Table 02: Frequency and percentage distribution of pre- test & post- test level of mental well- being among rural Adolescents. (N=800)

Level of Mental Well-being	Pretest		Posttest	
	n	%	n	%
Low well-being	479	63.6%	0	0.0%
Moderate well-being	321	36.4%	275	18.6%
High well-being	0	0.0%	525	81.4%
Total	**800**	**100.0%**	**800**	**100.0%**

Table 02: shows the frequency and percentage distribution of pre-test & post-test level of mental well- being among rural Adolescents. In pre- test, the majority of Adolescents had low well- being 525(63.6%), while 275(36.4%) had moderate well – being . None of the Adolescents were found to have high well- being during pre- test assessment. In post- test no Adolescents remained in the low well – being category. More than four – fifths of the Adolescents 525(81.4%/ achieved high well- being, while 275(18.6%) had moderate well-being.

Table 03: Mean and standard deviation of pre- test and post- test level of mental well- being among rural Adolescents.

Mental well- being	Mean	Standard deviation(SD)
Pre-test	25.81	13.242
Post-test	65.35	6.656

Table 03: shows the mean and standard deviation of pre-test & post – test mental well- being score among rural Adolescents. The pre- test mean mental well- being score was 25.81± 13.242, whereas the post- test mean mental well-being score increased to 65.35± 6.656.

Section C: Effectiveness of digital detox combined with outdoor group activities on mental well- being among Adolescents.

Table 04 Effectiveness of digital detox combined with outdoor group activities on mental well- being among rural Adolescents.

Variable	Test	Mean ± SD	Mean Difference	t-value	df	p-value
Mental Well-Being Score	Pre-test	25.81 ± 13.242	39.54	38.740	279	0.001** HS
	Post-test	65.35 ± 6.656				

*** Significant at p < 0.05**

Table 04: shows the digital detox combined with outdoor group activities significantly improve the mental well-being of rural Adolescents. The mean mental well- being score increased from 25.81± 13.24 in the pre- test to 65.35±6.66 in the post- test, with a mean difference of 39.54 points. The paired t-test demonstrated a highly significant improvement (t=38.740,df=279,p=0.001), indicating the intervention was highly effective.

Section D: Association between post- test level of mental well- being among rural Adolescents with selected demographic variables.

Table 05: Association between post-test level of mental well- being among rural Adolescents with the selected demographic variables. (N=800)

Demographic Variables	Category	Moderate Well-Being	High Well-Being	χ^2 Value	df	p-value
		n (%)	n (%)			
Age	13–14 years	0 (0.0)	133 (58.3)	261.244	2	0.000*
	15–16 years	0 (0.0)	92 (40.4)			
	17–18 years	52 (100.0)	3 (1.3)			
Gender	Male	0 (0.0)	148 (64.9)	71.600	1	0.000*
	Female	52 (100.0)	80 (35.1)			
Education	8th Standard	0 (0.0)	73 (32.0)	191.219	4	0.000*
	9th Standard	0 (0.0)	68 (29.8)			
	10th Standard	0 (0.0)	58 (25.4)			
	11th Standard	25 (48.1)	29 (12.7)			
	12th Standard	27 (51.9)	0 (0.0)			
Type of Family	Nuclear	0 (0.0)	201 (88.2)	162.478	1	0.000*

	Joint	52 (100.0)	27 (11.8)			
Daily Screen Time	<1 hour	0 (0.0)	89 (39.0)	68.590	2	0.000*
	1–3 hours	0 (0.0)	56 (24.6)			
	>3 hours	52 (100.0)	83 (36.4)			
Area of Residence	Urban	0 (0.0)	112 (49.1)	42.573	1	0.000*
	Rural	52 (100.0)	116 (50.9)			

*** Significant at p < 0.05**

Table 05 shows the association between post- test level of mental well-being and selected demographic variables among rural Adolescents. The findings revealed that age(χ^2=261.244,p=0.000),gender(χ^2=71.600,p=0.000),and area of residence(χ^2=42.573,p=0.000)had a statistically significant association with the post- test level of mental well- being among rural Adolescents.

DISCUSSION

The present study was undertaken to assess the effectiveness of digital detox combined with outdoor group activities on the mental well-being of rural Adolescents Ina selected rural area. The demographic findings emphasize the importance of introducing intervention that encourage healthy digital habits and promote mental well- being among Adolescents . The assessment of mental well-being showed that before the intervention ,63.6% of Adolescents had low mental well- being and 36.4% had moderate mental well- being ,while none had high mental well- being . After implementing the digital detox programme combined with outdoor activities, none had a low well- being category,81.4% had moderate well- being,18.6 % had moderate metal well- being. The mean mental well- being score increased from 25.82±13.24 in the pre- test to 65.35 ± 6.66 in the post- test, with a men difference of 39.54. Overall, the study provides evidence that digital detox combined with outdoor group activities is an effective, practical and cost- effective intervention for improving the mental well- being of rural Adolescents.

CONCLUSION

The present study concludes that digital detox combined with outdoor group activities is highly effective in improving the mental well- being of rural adolescents. Marked improvement was observed in the post- test mental well- being levels, supported by a substantial increase in the mean score and a highly significant paired *t*-test result. The intervention successfully reduced the proportion of adolescents with low mental well- being and increased the proportion with high metal well- being.

The study also concludes that post- test mental well-being was significantly associated with age, gender, educational status, family type, daily screen time and area of residence. These findings highlight the importance of implementing structured digital detox and outdoor group activity.

CONTRIBUTORS

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REFERENCE

1. Vanaken GJ, Danckaerts M. Impact of green space on adolescents' mental well-being: a systematic review. *Int J Environ Res Public Health.* 2020;17(18):6640. Available from: https://pubmed.ncbi.nlm.nih.gov/32932996/
2. World Health Organization. Addressing the digital determinants of youth mental health and well-being. Copenhagen: WHO Regional Office for Europe; 2025. Available from: https://www.who.int/europe/publications/i/item/WHO-EURO-2025-12187-51959-79685
3. Celik S, Gracia P, Gonzalez-Vila P, et al. The impact of school-based interventions on adolescents' digital use and mental wellbeing: a systematic review and meta-analysis. *Adolescent Research Review.* 2026. Available from: https://link.springer.com/article/10.1007/s40894-026-00287-5
4. Campbell R, McGaw V, Reupert A. Systematic review and meta-analysis investigating nature-based interventions for adolescent mental health. *J Environ Psychol.* 2026. Available from: https://www.sciencedirect.com/science/article/pii/S0272494426000186
5. Ly V, Vella-Brodrick DA. Effects of school-led greenspace interventions on mental, physical and social wellbeing in children and adolescents: a systematic review. *Educ Psychol Rev.* 2024. Available from: https://link.springer.com/article/10.1007/s10648-024-09963-1
6. McDougal E, Deighton J. Rural community-based interventions to improve the mental health and wellbeing of children and young people: a rapid scoping review. *J Community Psychol.* 2025. Available from: https://doi.org/10.1002/jcop.70037
7. Impact of social media on the psychological well-being of rural youth: a systematic literature review and bibliometric analysis. *Entertainment Computing.* 2025. Available from: https://www.sciencedirect.com/science/article/abs/pii/S1875952125000928
8. Hugh-Jones S, Ray S, Wilding A, et al. Does regular engagement with arts and creative activities improve

adolescent mental health and wellbeing? A systematic review. *SSM Popul Health.* 2025. Available from: https://pubmed.ncbi.nlm.nih.gov/40761439/

9. Dresp-Langley B. Children's health in the digital age. 2020. Available from: https://arxiv.org/abs/2007.03447
10. Benavides C, Benítez-Andrades JA, Marqués-Sánchez P, Arias N. eHealth intervention to improve health habits in the adolescent population: mixed methods study. 2024. Available from: https://arxiv.org/abs/2402.07923
11. Mubarak S, Rahamathulla MA. Online self-disclosure and wellbeing of adolescents: a systematic literature review. 2016. Available from: https://arxiv.org/abs/1606.03527
12. Mittmann G, Barnard A, Krammer I, et al. LINA: a social augmented reality game supporting real-world connection and sense of belonging for early adolescents. 2022. Available from: https://arxiv.org/abs/2204.12917